

REMARKS

Claims 1-2, 4-9, 12-16, 19-23, 26-29 and 38-41 are pending in the application. Claims 8, 15, and 22 have been amended. Claims 11, 18 and 25 have been cancelled.

Claim 1-2, 4, 6-9, 11-16, 18-23, 25-29, and 38 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2002/0007237 (Phung) in view of U.S. Patent No. 6,041,182 (Hart). Claims 5 and 39-41 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2044/0243532 (Steward) in view of U.S. Patent No. 5,660,183 (Chiang). These rejections are respectfully traversed. Applicants hereby request reconsideration and allowance of the claims in view of the following arguments.

Regarding the rejection of independent claims 1 and 38 based on Phung and Hart, neither of the cited references teaches or suggests the recited step of performing a validation process to screen out invalid fixes from the collected data. It is admitted in the Office Action that Phung does not disclose this claimed step. However, it is contended that Hart furnishes this step, and that it would have been obvious to modify the methodology of Phung to add this step to yield the claimed invention.

Applicants disagree. Hart does not teach or even suggest screening out invalid *fixes*, as claimed. Rather, Hart teaches screening out invalid *faults* (see, Hart at col. 3:59-62). Hart relates to linking symptoms and their causes, which Hart refers to as “faults”. In contrast, the present invention relates to linking symptoms and their fixes. In other words, Hart teaches analyzing the relationship between symptoms and faults and screening out invalid faults from its database, while the claimed invention analyzes the relationship between symptoms and fixes, and screens out invalid fixes.

There is a significant difference between Hart's analysis of symptoms and faults (i.e., their causes) and the present invention's analysis of symptoms and their fixes. As an example, referring to Fig. 2 of the present application, if a symptom such as "Runs Rough" is determined to be caused by a throttle position sensor (TPS) fault, the invention of claims 1 and 38 would note the fix performed by the technician on the TPS to solve the problem (e.g., adjust the TPS, replace the TPS, or clean the electrical connections to the TPS), and perform its validation process on the fix. However, Hart would simply assess the relationship between the Runs Rough symptom and the TPS cause. The claimed invention looks further downstream in performing its validation analysis than does Hart. The claimed methodology looks to the end of the repair process (the fix), while Hart looks to an intermediate stage of the repair process (the identification of the cause).

Since neither Phung nor Hart teaches or suggests the recited step of claims 1 and 38 of performing a validation process to screen out invalid fixes from the collected data, any combination of Phung and Hart, however made, would be lacking this recited feature, and it would not have been obvious to add this feature to any Phung/Hart combination. Since neither reference teaches or suggests screening out invalid fixes, no Phung/Hart combination could teach or suggest the additional required step of claims 1 and 38 of assigning at least one effective fix *based on an accumulated number of validated fixes*.

Moreover, it would not have been obvious to combine Phung and Hart as suggested by the Examiner, because Phung's stated goal is to recommend the most likely optimum solution to a problem to a technician (see, Phung at Abstract). As discussed hereinabove, Hart's technique of eliminating irrelevant faults would not further this goal. Hart's technique is at least one step

removed from a suggestion of the best solution to a problem, and instead focuses on identifying a cause of the problem.

Thus, independent claims 1 and 38 are not rendered obvious by a combination of Phung and Hart, and the rejection should be withdrawn.

Consequently, claims 1 and 38 are patentable, as are claims 2, 4, 6, 7, and 29, which depend from claim 1.

Regarding the obviousness rejection of independent claims 8, 15 and 22 based on Phung and Hart, these claims have been amended to recite that the data related to diagnostic results include at least one of a test for finding a cause of a fault and a fix to cure a cause of a fault. These limitations were originally recited in dependent claims 11, 18 and 25, which have consequently been cancelled.

As discussed in detail hereinabove in connection with claims 1 and 38, neither of the cited references teaches or suggests the recited step of amended claims 8, 15 and 22 of performing a validation process to screen out invalid fixes from the collected data. Furthermore, neither reference teaches or suggests the recited step of performing a validation process to screen out invalid *tests* for finding causes of faults. Phung does not teach validating data, and Hart teaches eliminating irrelevant causes of faults, but does not discuss evaluating tests and screening out invalid tests, as claimed.

Since neither Phung nor Hart teaches or suggests the recited step of amended claims 8, 15 and 22 of performing a validation process to screen out invalid tests and/or fixes from the collected data, any combination of Phung and Hart, however made, would be lacking this recited feature, and it would not have been obvious to add this feature to any Phung/Hart combination. Moreover, since neither reference teaches or suggests screening out invalid tests and/or fixes, no

Phung/Hart combination could teach or suggest the additional required step of claims 8, 15 and 22 of assigning at least one effective diagnostic result *based on an accumulated number of validated diagnostic results*, wherein the diagnostic results includes at least one of a test for finding a cause of a fault and a fix.

Thus, amended independent claims 8, 15 and 22 are not rendered obvious by a combination of Phung and Hart, and the rejection should be withdrawn.

Consequently, amended claims 8, 15 and 22 are patentable, as are claims 9, 12-14, 16, 19-21, 23 and 26-28, which depend from claims 8, 15 and 22, respectively.

Regarding the obviousness rejection of independent claims 5 and 39-41 based on Steward and Chiang, neither of these references teaches or suggests the claimed steps of accumulating a *number* of diagnostic results (or fixes), and assigning at least one effective diagnostic result (or fix) to a symptom based on the *number results* of the accumulating step. Both Steward and Chiang teach rule-based expert systems that use archival patient data as an input when determining their rules. However, neither reference teaches or even suggests the specific recited steps of accumulating a *number* of diagnostic results for *each symptom* and basing its rules for a symptom on the *number* of results.

Applicants note that the passage of Steward (paragraphs 0134-0237) cited in the Office Action to support the contention that this reference accumulates a number of each effective fix corresponding to each one of various symptoms, as claimed, does not relate to accumulating numbers corresponding to symptoms at all. Rather, it relates to creating a cause and effect model using Boolean algebra. This passage of Steward illustrates that the teaching of Steward, like that of Chiang, relates mainly to using Boolean logic to create cause and effect models, and does not teach or even suggest accumulating numbers and using accumulated numbers for each symptom.

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Since neither of the two cited references teaches or suggests accumulating numerical data for each symptom and choosing effective responses based on the numbers, as claimed, any combination of Steward and Chiang, however made, would be missing these recited steps, and it would not have been obvious to modify any Steward/Chiang combination to yield the inventions of claims 5 and 39-41.

Thus, independent claims 5 and 39-41 are not rendered obvious by a combination of Steward and Chiang, and the rejection should be withdrawn.

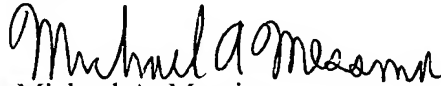
Consequently, claims 5 and 39-41 are patentable.

Accordingly, it is believed that the application is now in condition for allowance. Applicants therefore respectfully request an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicants' representative at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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